

# CEOS WSSD Follow-up Programme

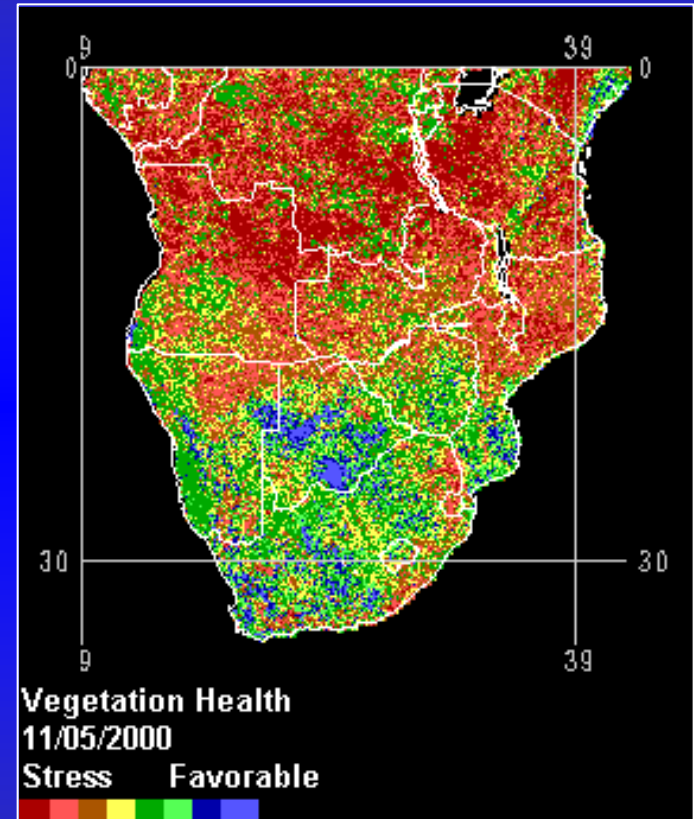
Michael B. Hales  
CEOS WSSD Team Leader

# Core Objectives of Follow-up Programme

To make linkages between the space community and the WSSD Plan of Implementation, especially where the **value of Earth observations** in the sustainable development process are specifically mentioned.

# CEOS Involvement at the World Summit of Sustainable Development (WSSD)

The 54-page WSSD Plan of Implementation, adopted by Heads of State, contains 12 specific references to the need for global/satellite/Earth observation





# CEOS WSSD Follow-up Program Modules

- 1) Education, Training and Capacity Building;**
- 2) Water Resource Management;**
- 3) Disaster Management and Conflicts;**
- 4) Climate Change; and**
- 5) Global Mapping, Land-use Monitoring and Geographic Information Systems**

# Module One Objective

104. Assist developing countries, through international cooperation, in **enhancing their capacity in their efforts** to address issues pertaining to environmental protection including in their formulation and implementation of policies for environmental management and protection, including through urgent actions at all levels to:

....

(b) **Promote and, where appropriate, improve their use of satellite technologies for quality data collection, verification and updating, and further improvement of aerial and ground-based observations, in support of their efforts to collect quality, accurate, long-term, consistent and reliable data;**

# Education, Training and Capacity Building Workshop

## Module 1 Workshop Goal:

Workshop will examine **capacity building needs of African users** and opportunities for long-term partnership – seeking an optimal fit between African needs and CEOS capabilities



# Stellenbosch Workshop



# Stellenbosch Outcomes

- 8 General Capacity Building Principles for CEOS
- 13 Specific Recommendations for application of these Principles in Africa
- An Africa Advisory Group

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A Clear Understanding of What We Need to Do



# 8 Capacity Building Principles

1. As CEOS, through its Members and Associates, undertakes activities promoting sustainable development-oriented initiatives which include capacity building components, it should remember to acknowledge **social, economic, and environmental applications that address locally-defined data and information needs**, and take steps to promote access to data and information for sustainable development.

## 8 Capacity Building Principles (cont')

2. By linking **space agency resources** (which are, at minimum, access to remote sensing expertise and education materials) to **locally-defined needs**, CEOS should promote the utilization of satellite information through training and education, provision of data and information, and/or partnerships with users.

## 8 Capacity Building Principles (cont')

3. To support sustainable development, CEOS should build **long-term and sustainable partnerships** through its Members and Associates with relevant organizations and institutions, notably, universities, specialized and professional remote-sensing organizations, and government and non-governmental organizations.



## 8 Capacity Building Principles (cont')

4. Through its unique and high-level membership, **CEOS should assist local organizations to raise awareness** of the importance of Earth observation data and information with their key local and governmental decision makers.

## 8 Capacity Building Principles (cont')

5. CEOS' capacity-building efforts **should build on existing local programs, and engage existing organizations**, always recognizing local capacity (e.g., in terms of expertise, communications infrastructure, and other resources) and respecting indigenous knowledge and local priorities.

## 8 Capacity Building Principles (cont')

6. Understanding that CEOS is not the only space-oriented organization interested in supporting capacity building efforts for sustainable development, **CEOS should avoid duplication of effort by coordinating its activities with like-minded groups.**



## 8 Capacity Building Principles (cont')

7. CEOS Members and Associates should **appropriately model capacity building** by encouraging – and when necessary financially supporting – involvement of developing country representatives in WSSD Follow-up Programme activities, and by **participating in and supporting relevant forums and events.**

## 8 Capacity Building Principles (cont')

8. CEOS' short-term and long-term education, training, and capacity building efforts should be **complementary, comprehensive, and measurable** to be valued and further supported by the CEOS membership.

“The principles and recommendations emanating from this workshop must influence the capacity building agenda of CEOS - not just for Africa, but for the entire globe.”

**Hon. Rejoice Mabudafhasi**

Dep. Min. of Environmental Affairs and Tourism  
South Africa



# African Advisory Group

The African Advisory Group (**AAG**) was formulated on a voluntary basis during the 1st CEOS Education, Training and Capacity Building Workshop held in Stellenbosch, South Africa from 2-3 October 2003.

# Africa Advisory Group

- 14 countries
- 23 members

The African Advisory Group undertakes to assist CEOS **WGEdu**; as well as the CEOS **WSSD** Follow-up Programme with **identifying relevant projects in the African continent** where satellite remote sensing and GIS technologies will be applicable.

CEOS welcomes the creation of the Africa Advisory Group and asks its WGEdu and WSSD Teams to use the AAG for support in its working in Africa.

Plenary urges its Members and Associates similarly to make contact with the AAG.



# **CEOS WSSD Follow-up Programme Module 1 Next Steps**

- **Work closely with Module 2 next year**
- **Work closely in the development of the other Modules**
- **Further develop and strengthen linkages with the AAG**
- **Build linkages to Latin America and Asia**
- **Continue to contribute to the GEO Capacity Building Subgroup**

# Module 2

Water Resource Management

Dr. Josef Aschbacher

# Module 2 – Water Resources Management

## Co-leaders

- ESA
  - launched TIGER initiative
- JAXA
  - supported IFNet, GPM and CEOP
- Agencies contributing to TIGER
  - CSA
  - UNESCO
  - CSIR
  - UNOOSA
  - Others



# ESA's TIGER Initiative



**TIGER**

is a concrete step to  
implement the outcome of the  
Johannesburg Summit,  
focusing on

**Space – Water - Africa**



# TIGER – Thematic areas

## Priority topics

- Wetland monitoring
- Groundwater resources management
- Food security

Other topics might follow later

# TIGER's DUAL OBJECTIVES





# Objective 1 – Demonstrator Projects

## Progress 2003

- A number of projects launched or committed by ESA during 2003
  - AQUIFER, GLOBWETLAND, GMFS, EPIDEMIO
  - Investment in 2003 approx. 4 M € (ESA only)
- Some other partners indicated contributions
  - e.g. UNESCO, UNOOSA, S-Africa, Canada, etc.

# WETLAND Monitoring

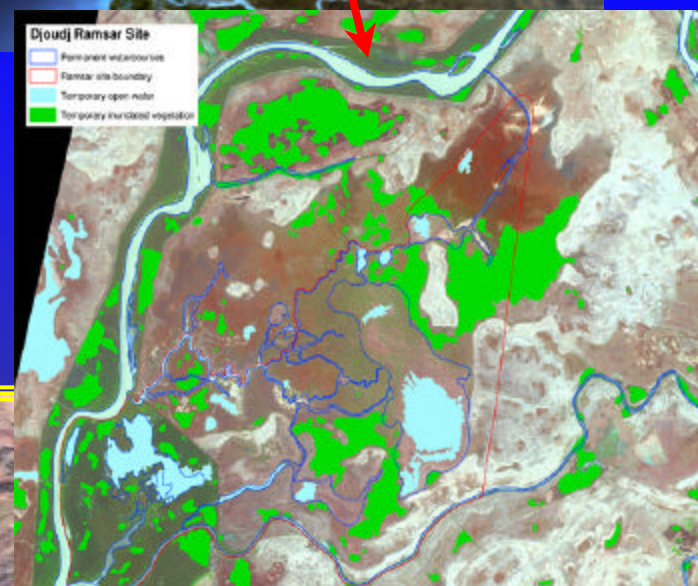
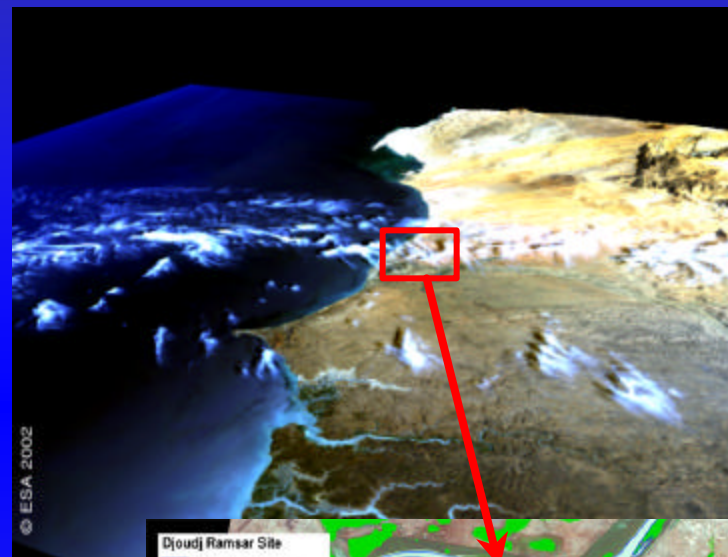
## ESA's GlobWetland Project

### Users

- National Focal Points of Ramsar
- Wetland managers
- International Scientific Groups

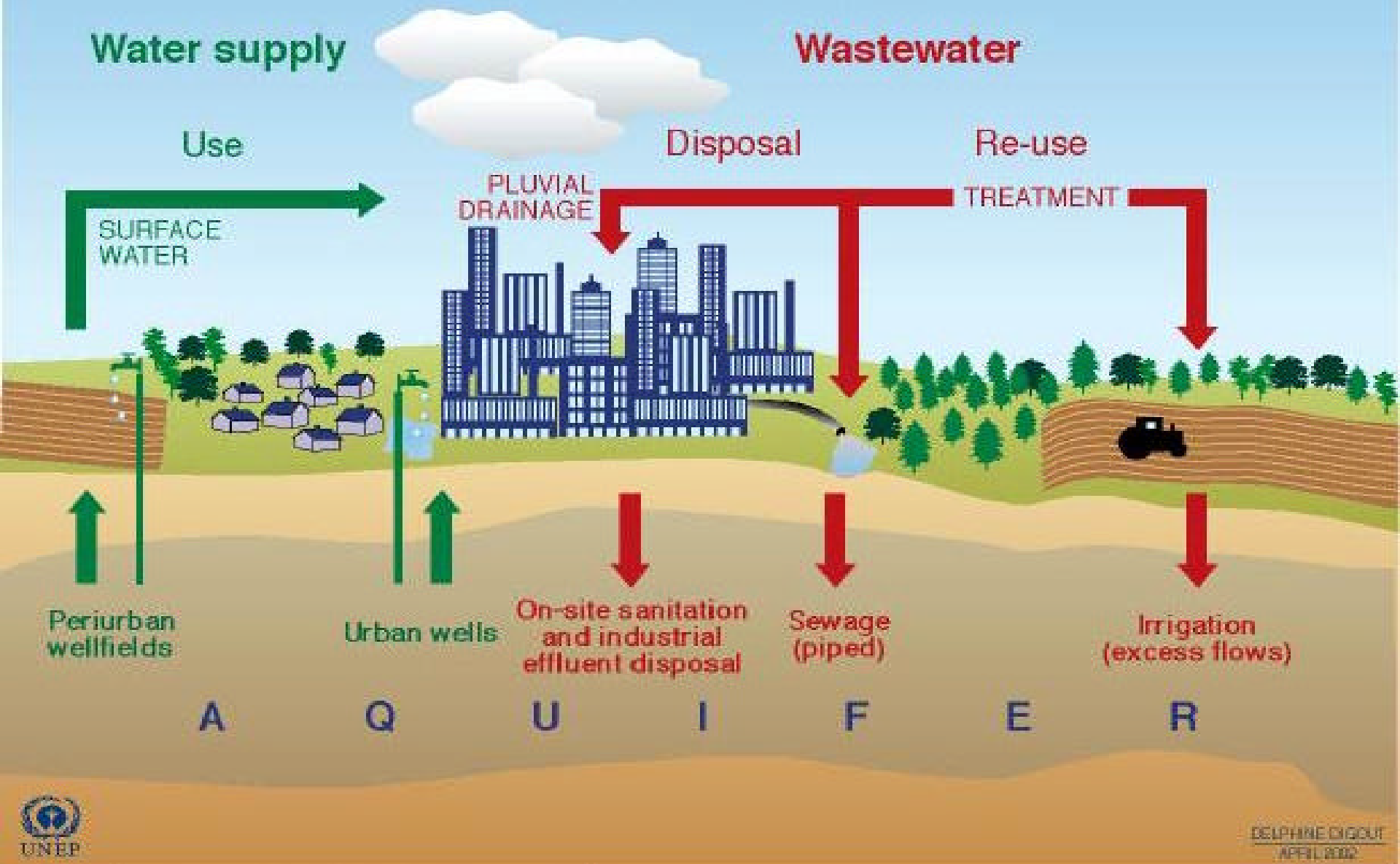
### Products

- Land cover/use
- Digital Elevation Models
- Water regime
- Identification and monitoring of changes (seasonally or and at long term)
- Identification and monitoring of threats in the wetland site and the corresponding catchment area



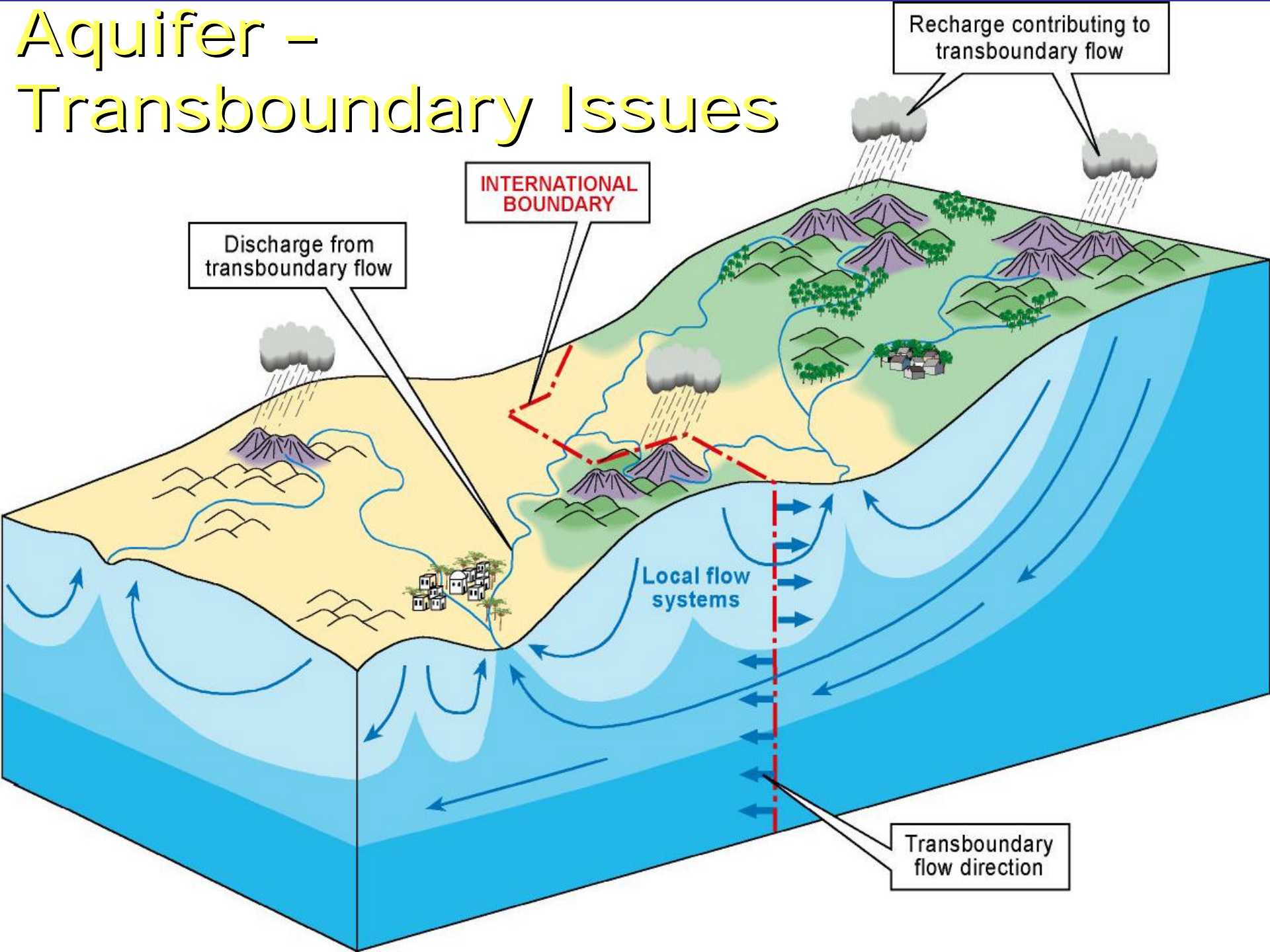
# AQUIFERS

## The Urban Water Cycle Man's Impact on Groundwater

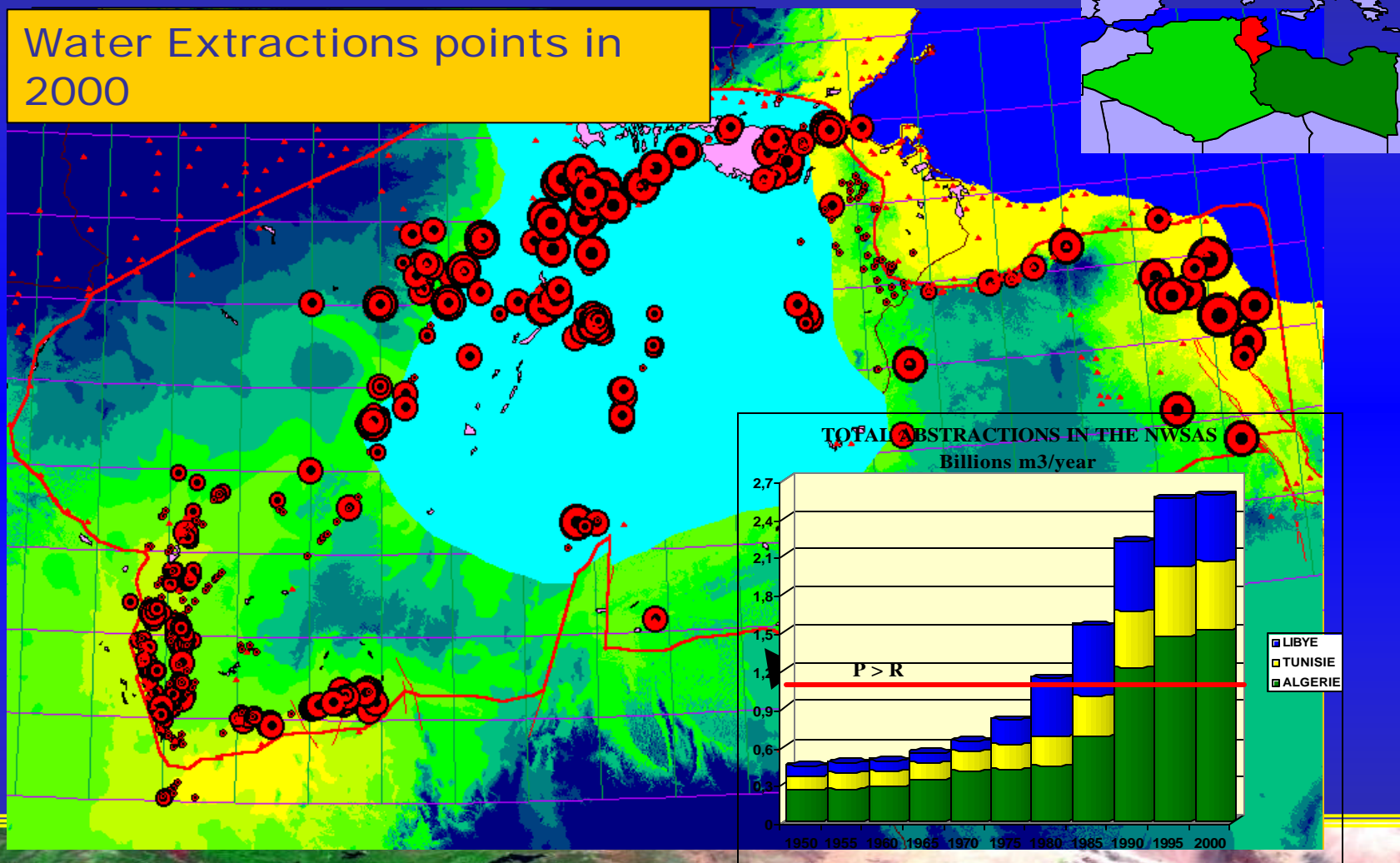




# Aquifer – Transboundary Issues



## Water Extractions points in 2000





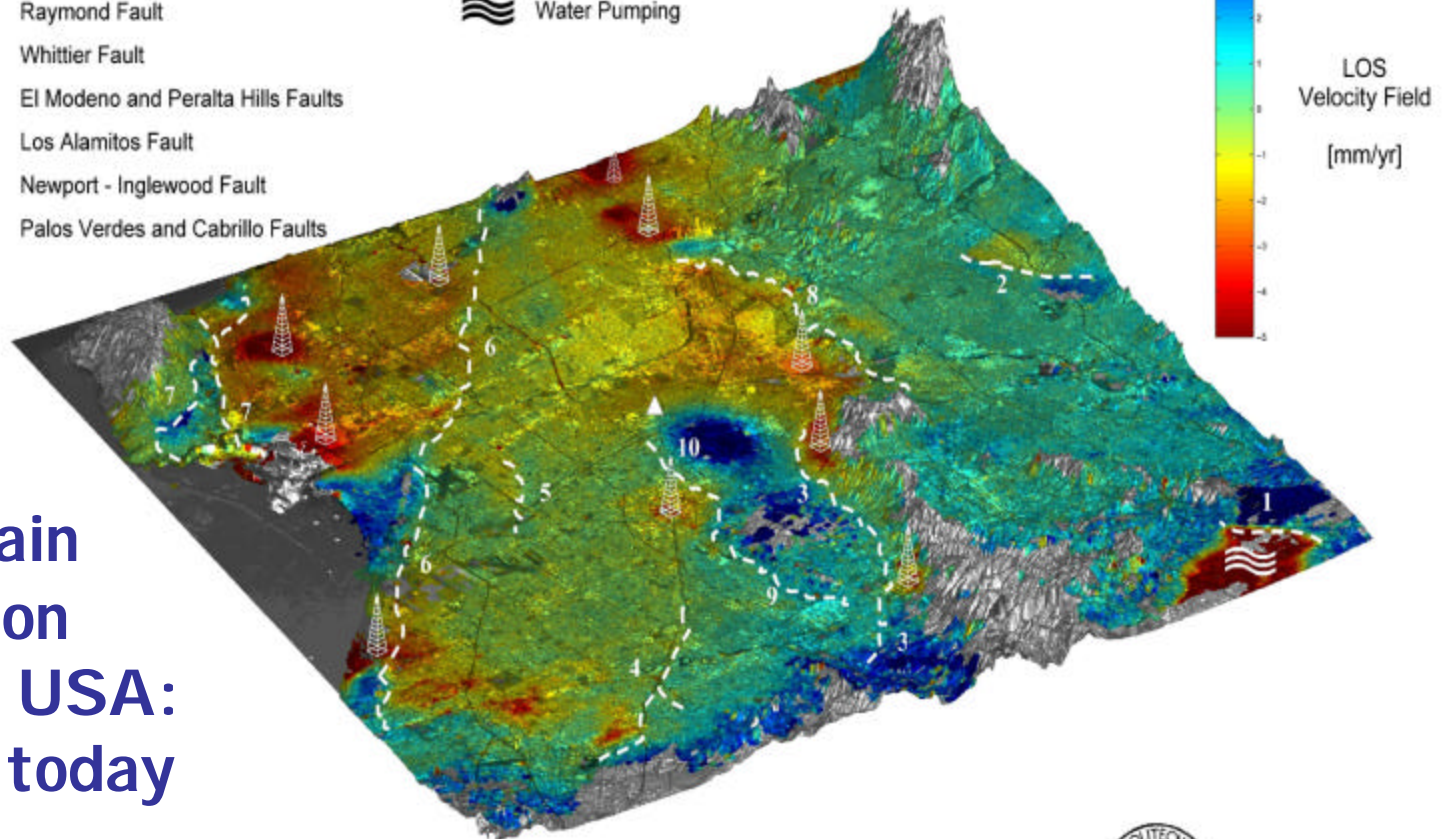
# Terrain Motion in L.A., USA: 1992 - today

## Seismic Faults in Los Angeles Basin:

1. San Jose Fault
2. Raymond Fault
3. Whittier Fault
4. El Modeno and Peralta Hills Faults
5. Los Alamitos Fault
6. Newport - Inglewood Fault
7. Palos Verdes and Cabrillo Faults

## Subsidence Phenomena:

-  Oil & Gas Fields
-  Water Pumping

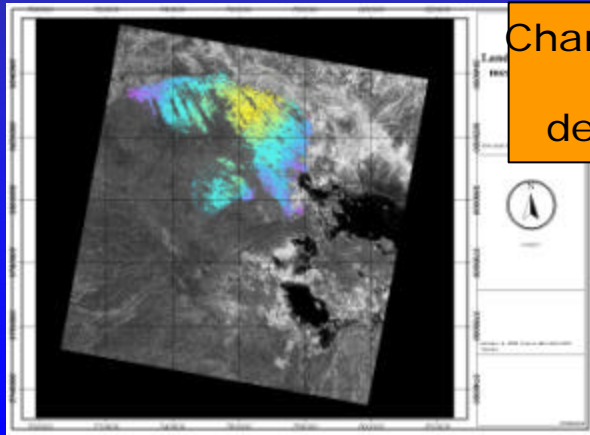


8. Elysian Park Blind Thrust (?)
  9. Coyote Hills Blind Thrust (?)
  10. Santa Fe Spring Blind Thrust (?)
- Puente Hills Blind Thrust (?)

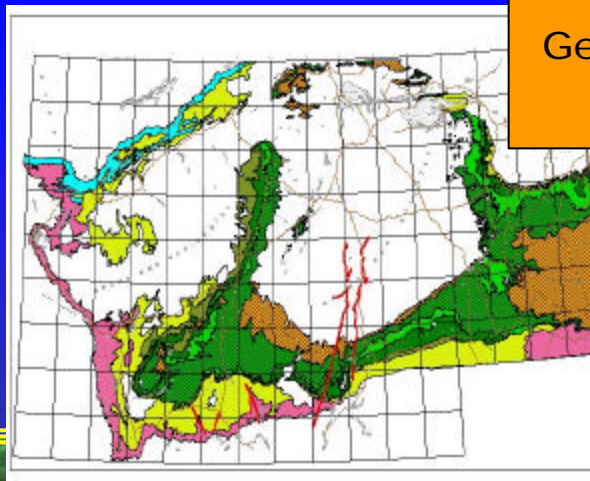


T.R.E.

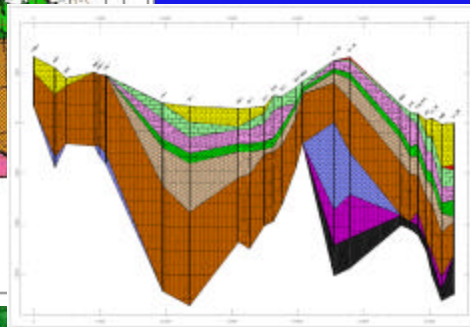
- Water extraction model



Changes in volume due to  
subsidence  
derived from ERS data

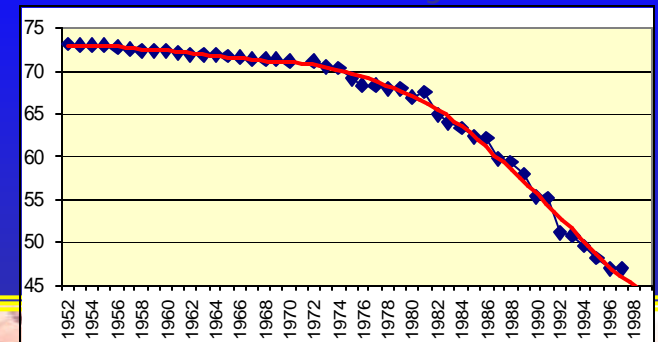


Geological information  
Provided by OSS



Water Extraction  
Model

Water availability





# Objective 2 - Political Process

## Progress 2003

- Paris meeting, May, ESA HQ, 40 part., 20 Africa
- Rabat Workshop, Oct, CRTS, 120 part., 85 Africa
- SHIP Agreement with UNESCO
- Meetings with World Bank
- Rabat Initiative
- User and provider communities consolidated

**Urgently needed** – championship by African partners, i.e. AMCOW, NEPAD, regional centres, etc.



# TIGER Partners

## 3 categories

- **Providers**

- ESA, other CEOS partners, value adding companies,...

- **Users**

- OSS, AGRHYMET, African hydrology institutions,...

- **Sustainers**

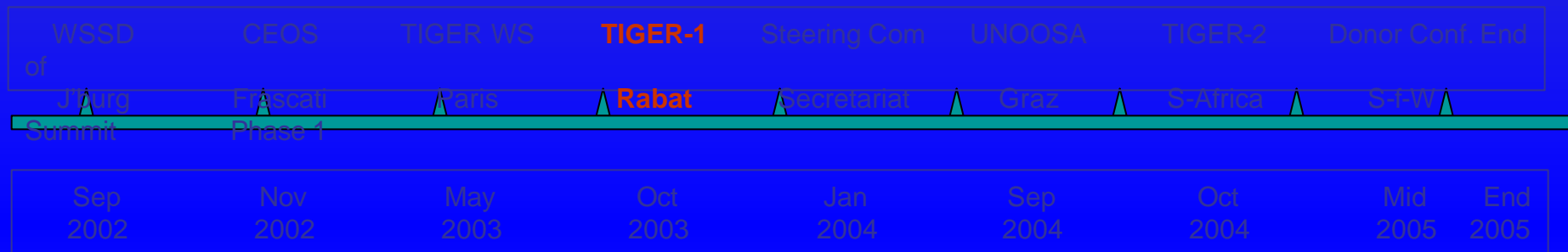
- AMCOW, NEPAD, World Bank, African Development Bank, EC, Rabat Initiative, ...

**UNESCO** identified as strategic partner → SHIP  
agreement



# TIGER Schedule

## Political Process



## Demonstrator Projects




Project ... N

# TIGER Rabat Meeting

## The Meeting

- 6-8 Oct 2003, hosted by CRTS Morocco
- Organized by ESA, UNESCO, CRTS
- 125 participants, 85 from Africa
- Minister Elfassi (Morocco), Minister Koné (Ivory Coast)

## Main Outcome

- **Plan of Action** adopted
- Agreement on specifics for Tiger → **Plan of Implementation** by early Nov
- Call for **TIGER Project proposals** issued at conference
- **Announcement by S-Africa** to host TIGER-2 in Oct 2004, inviting Ministers in Water (and Science) domain
-  **Announcement by Ivory Coast and SADC** to host regional Tiger workshops



# Recommendations to Plenary

CEOS Agencies (M + A) are encouraged to

1. Formally **join** Module 2 activities
2. Provide support to joint **Module 1 & 2** activities in 2004 (training on WRM, data principles, etc.)
3. On TIGER: provide **EO data** for 'approved' TIGER projects (announcements by CSA, JAXA in Rabat; ESA in preparation)
4. Use project outcome of Module 2/TIGER as **showcase for engagement of donor agencies** (e.g. WB)



# Module 3

## Disaster Management and Conflicts

# Module 3: WSSD Reference

- 35. An integrated, multi-hazard, inclusive approach to address vulnerability, risk assessment and **disaster management**, including prevention, mitigation, preparedness, response and recovery, is an essential element of a safer world in the twenty-first century. Actions are required at all levels to:  
....
- (c) Strengthen the institutional capacities of countries and promote **international joint observation and research**, through improved surface-based monitoring and **increased use of satellite data**, dissemination of technical and scientific knowledge, and the provision of assistance to vulnerable countries;

# WSSD Module 3

## Disaster Management and Conflict DMC

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- **Purpose**

- **increase awareness in the applications and utilization** of Earth observation data in developing countries for disaster management and conflicts.
- assist in the **establishment** of infrastructure and communications in support of disaster management and conflicts,



# GOALS For Module 3

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- **Goal 1:** Define the components of disaster management and conflict, especially the capacity building component and the GIS component.
- **Goal 2:** Incorporate recommendations for disaster management and conflicts in developing countries from the CEOS DMSG Report
- **Goal 3:** Provide recommendations for improved infrastructure for observations and decision support

# Next Year

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- Module 3 will review outputs and work closely within the **Earth Observation Summit's GEO Framework**, as well as other internationally recognized initiatives such as the **International Disaster Charter**.
- Focus on regions in **Africa** and **Latin America**
- This coming year will see significant Module 3 progress as per the CEOS WSSD plan.

# Module 4

## Climate Change



# Module 4

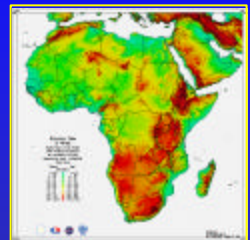
- No leadership
  - No team members
- 

**Plenary Action:** WSSD Follow-up requests  
CEOS agencies nominate leadership and  
members to Module 4



# Module 5

## Global Mapping, Land Use Monitoring, and GIS



# WSSD Implementation Plan... Guidance

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- Strengthen cooperation and coordination among global observing systems ... take into account the **need for building capacity** and the sharing of data.
  - Encourage initiatives and **partnerships** for global mapping.
- Support countries, particularly **developing countries** in their national efforts to **use satellite and remote sensing technologies** for data collection.

*(from WSSD Plan of Implementation)*

# Factors that Influence Proposal

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- Sustainable Development requires the consideration of **environmental, economic, and social dimensions**.
- It is often difficult to **integrate and validate** data sets at a national or global scale.
- Many countries **lack the support/resource for continuity** in collecting, processing, analyzing, integrating, and interpreting such information
- Assist integration and use of **Earth observation data** into decision making frameworks – especially for sustainable development

# Next Steps

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- Consider draft plans being drafted by the Group on Earth Observations (GEO).
  - Assess **GEO implementation plans**, particularly the Subgroup on Capacity Building, User Requirements and the Subgroup on Data Utilization
- Consider Global Monitoring of Environment and Security (GMES) initiative
- Consider new FAO Classification System
- Revise Module 5 proposal based on these outcomes
- Begin implementation of the proposal.



# Conclusion

## CEOS WSSD Follow-up Programme Goals in 2004

- **Support of the 2004 CEOS Chair**
- **Align our work with GEO**
- **Go beyond Africa**

